REMARKS

The Restriction Requirement

The Examiner has sua sponte withdrawn claims 26-73 from consideration under 37 CFR 1.142(b) and MPEP 821.03. The applicant does not consent to this restriction requirement and withdrawal of these claims from consideration and respectfully requests the Examiner to reconsider this restriction requirement. The grounds upon which this restriction requirement should be withdrawn is that each and every claim of claims 26 -73 defines a subcombination of the combination of claim 25 or further defines specific details about the instruction set stored on the computer medium of claim 25.

The Section 102 Rejection Of Claim 25

For a rejection under 35 USC 102 to be proper, every limitation of the claim must be found in a single prior art reference. Here, the Examiner Ryu et al, U.S. 5,481,718 as anticipating claim 25.

Claim 25 reads:

25. [NEW] A computer-readable medium having stored thereon computer-readable instructions, which, when executed by a computer, cause said computer to perform the following process:

receive user input data that defines primitives of a conceptual model, said conceptual model being comprised of an object model, a dynamic model, a functional model and a presentation model which together define the complete functionality of a target computer program to be automatically generated and which defines complete interface mechanisms for interaction of user or other processes with the functionality of said target computer program,

no other software code, code component, code libraries or any other third party software artifact being necessary to completely define the functionality of said target computer program and its interface mechanisms;

automatically converting said user input data into data structures in the form of formal language statements organized by a formal language syntax, the collection of all such formal language statements forming a formal language specification;

validating said formal language specification to ensure it is complete, correct and unambiguous to prepare said formal language specification for automatic translation into complete, operative code of said target computer program which is the functional equivalent of said conceptual model and having a user interface defined by the primitives entered by said user which define said presentation model.

Claim 25 is a computer-readable medium that stores computer-readable instructions which control a computer to implement a computer program modeler which can be used to design a computer program to be built by automatic translation of a formal language specification. The formal language specification is automatically created from a Conceptual Model which is defined by user input data solicited by the process carried out by the computer under control of the instructions on the medium. The user input data is solicited via user interface mechanisms such as dialog boxes, etc. The user input data defines a Conceptual Model of the program to be automatically written. That Conceptual Model is comprised of an object model, a dynamic model, a functional model and a presentation model. The object model defines the classes of objects in the system. The dynamic model defines service preconditions via a state transition diagram, the service preconditions being formulas labeling the state transitions and defines valid object lives from

creation to death. The dynamic model also defines an object interaction diagram which defines trigger relationships and global transactions which are services implemented by an object in the object model which affect other objects in the object model. The functional model contains formulas entered by the user which define how events affect the values of variable attributes in objects defined in the object model. The user input which defines the presentation model defines the types of patterns of graphical user interface tools and other user interface mechanisms which will constitute the user interface of the program under design.

Ryu only teaches an object-oriented processing system which:

1) overcomes the problem in the prior art object-oriented language which are generally data oriented in dealing with resources by providing a system which is capable of treating methods as an object in addition to data;

2) overcomes the problem of the prior art providing no design principle with regard to the attempt to handle new processing with a new objective or target by carrying out designing by using the static model, dynamic model and the functional model;

3) overcomes the problem of the prior art of providing no substantial support to the attempt of systematically considering the causality by only providing instructions which can handle causality within a class by providing a system which can handle causality both within a class and outside the class.

4) overcome the limitations of the prior art which can only define structure in the form of "is-a" relationships or "part-of" relationships by providing a system which is capable of using relation links and network links.

5) overcomes the problem in the prior art of using pointers to set links which slows down the system by providing a system which uses a high speed internal schema.

6) overcomes the problem in the prior art of not supporting composite

objects by providing a system which supports composite objects.

7) overcomes the limitation of the prior art methods which define how to use individual information which are limited to predetermined content by providing a system which provide autonomy to the methods such that they can inform the operator of various conditions that the operator should know.

Ryu does not teach soliciting user input which defines the primitives of a presentation model which defines the desired user interface of the program under design as called for by claim 25. Claim 25 calls for:

> receive user input data that defines primitives of a conceptual model, said conceptual model being comprised of ...a presentation model which together define the complete functionality of a target computer program to be automatically generated and which defines complete interface mechanisms for interaction of user or other processes with the functionality of said target computer program....;

Since this claim element is not taught by Ryu because there is no mention of a presentation model, claim 25 is not anticipated.

Ryu does not teach converting his models into a formal language specification. Claim 25 calls for:

> automatically converting said user input data into data structures in the form of formal language statements organized by a formal language syntax, the collection of all such formal language statements forming a formal language specification;

Claim 25 is not anticipated for this reason.

Ryu does not teach a Dynamic Model or a Functional Model that are the same data structures as the Dynamic Model and Functional Modle of claim 25. Ryu's Dynamic Model indicates the time sequential relationship (order of processing) between instances forming the classes as a session. The Ryu static model describes a set of classes and relationships between them, whose instantiation in terms of instances of classes forms the dynamic model. In other words, the Ryu Dynamic Model is the "run-time" version of the static model, and the terms "static" and "dynamic" are used in this sense.

In contrast, the Dynamic Model of claim 25 defines service preconditions and state transitions and defines the valid lives of objects, trigger relationships and global transactions. This is not the same thing as Ryu's Dynamic Model because the concepts of a state transition diagram that defines event preconditions and event transitions and state transitions and triggers and global transactions are not taught in Ryu.

Likewise, Ryu's Functional Model is a set of classes and methods related to existing behavior.

In contrast, the Functional Model of claim 25 defines the valuation formulas that define the effect of events on the values of variable attributes. Ryu does not teach the concept of valuation formulas, so the Functional Model of claim 25 is radically different in structure and operation than the Functional Model in the Ryu system.

In Col. 11, lines 8-18, Fyu teaches the use of semantic data related to the nature of the object, but it does not teach the semantics of a formal language specification which is what the user data in the system of claim 25 is turned into. **In other words, Ryu does not teach a medium storing instructions which control a computer to solicit and receive user input data which is automatically converted into semantic data of a formal language specification as called for by claim 25.**

Another difference between the system of claim 25 and the Ryu prior art is in validation. The system of claim 25 converts user input which defines the primitives of a Conceptual Model into a formal language specification which has rules of syntax and semantics. These rules are used in the system of claim 25 to validate the formal language specification to ensure it is complete and correct prior to automated translation into working code.

In contrast, Ryu does not teach the use of a formal language specification nor any other type of formalism and there is no mention in Ryu

anywhere of rules of syntax or semantics of any specification as being part of his system nor of use of rules of syntax and semantics to validate a specification to ensure it is complete and correct. Therefore, claim 25 is not anticipated because Ryu does not teach any validation step.

The Examiner stated the ability of the system of claim 25 of "automatically converting said user input into data structures in the form of formal language statements organized by a formal language syntax, the collection of all such formal language statements forming a formal language specification" is anticipated by Col. 9, lines 49-53. That passage of Ryu refers to how Ryu's dynamic model is formed by means of a causality relationship with the static model. **This passage of Ryu does not teach automatic conversion of user input data into a formal language specification as required by claim 25.**

Further, Ryu does not teach any kind of conversion, transformation or translation.

The Examiner asserted that the validation process required by claim 25 is anticipated by the "simulation" taught in Col. 10, Lines 42-51. However, validation and simulation do not mean the same thing and are not the same processes. Validation is the process of checking to see if something satisfies a certain criterion, while "simulation" is an imitation of some real device or state of affairs. Simulation attempts to represent certain features of the behavior of a physical or abstract system by the behavior of another system. **Ryu's simulation is not a validation process.**

There is no evidence that the Col. 11, lines 42-52 teachings link the "hyper language processing unit" with validation tasks so the "hyper language processing unit" does not perform the validation process called for by claim 25.

Finally, the test process taught by Ryu in Col. 10, line 62 to Col. 11, line 2 is not a validation process because the testing acitivity is related to "executionable process data" and not to "formal language specifications".

Claim 25 is therefore not anticipated.

Respectfully submitted,

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